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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,822	01/27/2004	Paul E. Krajewski	GP-303999	9090

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MILLER IP GROUP, PLC  
GENERAL MOTORS CORPORATION  
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BLOOMFIELD HILLS, MI 48304

EXAMINER
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MAPLES, JOHN S

ART UNIT	PAPER NUMBER
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1728

MAIL DATE	DELIVERY MODE
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01/21/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/765,822	<b>Applicant(s)</b> KRAJEWSKI ET AL.	
	<b>Examiner</b> John S. Maples	<b>Art Unit</b> 1728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18, 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1728

1. The following non-final rejection is in response to the 1 November 2010

Dismissal of Appeal.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-18 and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishida et al.-US 6,893,765. (Nishida) (New Rejection with regard to claims 22-24)

Reference is made to Figures 1-3 of Nishida along with column 4, line 59 through column 5, line 57 and Example 1 and in particular to column 9, lines 24-26 where the bipolar plate is taught being made of aluminum. Figure 1 depicts the claimed anode bipolar plate 21 and the cathode bipolar plate 31 sandwiching the membrane (MEA) 10. In view of the bipolar plates having recesses 31' therein, flow channels are formed in the bipolar plates. Figure 1 in Nishida shows trapezoidal shaped flow channels. It is noted that in that all of the bipolar plates 21 and 31 in the fuel cell stack in Figure 1 have recesses at the ends thereof, which recesses include end plates 37, 27 and 17 that hold the bipolar plates together.

4. Claims 1-7, 10-17, 22, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Goebel-US 6,974,648. (Goebel) (New Rejection with regard to claims 22 and 23)

Reference is made to the Abstract of Goebel along with Figures 1-5 and column 1, lines 12-23; column 1, lines 55-67 and column 3, line 7 through column 5, line 57. These portions of Goebel set forth metal bipolar plates 60, 160 and 260 with a membrane (MEA) inbetween-see Figures 3-5. Figure 1 and column 3 in Goebel set forth the claimed anode side metal bipolar plates and the cathode side metal bipolar plates and how the adjacent fuel cells are connected and configured as claimed by applicant. The middle portions of each bipolar plate include trapezoidal-shaped flow channels 66, 68, 70; 166, 168, 170; and 266, 268, 270 as seen in Figures 3-5, respectively. The edges of the bipolar plates are recessed as seen in the right hand and left hand sides as seen in Figures 2-5 of Goebel.

5. Applicant's arguments have all been considered but are not deemed persuasive.

Applicant argues that claims 1 and 11 are product claims and are defined by the structural elements that make up the product. Applicant further states that claims 1 and 11 recite that the bipolar plates are extruded plates, which defines them as structural elements and not a process. The examiner agrees with this analysis.

The applicant further states that claims 1 and 11 recite that the flow channels are formed by an extrusion process. Applicant further states that this language is merely

descriptive language that identifies how the flow channels are formed for a bipolar plate that is an extruded bipolar plate. This may be true, however, the wording “extruded bipolar plate” is a product-by-process claim limitation and this limitation will be discussed below.

Applicant also states that the language “the flow channels are formed by an extrusion process” is functional language. The examiner disagrees with this analysis. The fact that the bipolar plates are formed by extrusion does not define a particular capability or purpose for the flow channels.

Next, applicant argues that claims 1 and 11 are not product-by-process claims. It is true that most of the language in claims 1 and 11 is not product-by-process terminology, however, the language “extruded bipolar plate(s)” is product-by-process terminology. This language sets forth a method by which the bipolar plate(s) are formed and are product-by-process limitations. Thus, contrary to applicant’s assertion, the application of In Re Thorpe 227 USPQ 964 is proper for this portion of the claimed subject matter.

The applicant further argues that if claims 1 and 11 are product-by-process claims, then the language that the bipolar plates are made by an extrusion process adds patentable significance to the claims. The examiner respectfully disagrees. As In Re Thorpe states, as long as a reference meets the limitations of the product of a product-by-process claim, then the claimed product is met by the teachings in the reference. It does not matter how the product is formed as long as the reference

teaches the product limitations. As stated previously in this answer, both Nishida and Goebel teach the limitations of the bipolar plates as applicant is currently claiming.

More specifically, applicant states that bipolar plates made by an extrusion process impart a distinctive structural characteristic to the plate. This argument will be addressed in the paragraphs that follow with regard to the applied references to Nishida and Goebel.

Applicant argues that bipolar plate in Nishida has a different profile that applicant's bipolar plate profile. Reference is made to Figure 1 of Nishida where flow channels are depicted of a trapezoidal shape. This shape of flow channels in Nishida is the same configuration as the flow channels in the bipolar plate depicted by appellant in Figure 3 of the present application. Therefore, the bipolar plates in Nishida have the same configuration and profile as the bipolar plates of applicant and thus the claimed subject matter is met by the teachings to Nishida.

Applicant further argues that Nishida does not teach a bipolar plate formed by an extrusion process. This may be true, however, appellant has claimed a product and not a method of making that product. As stated previously in this answer, in a product-by-process claim, the method of making the product is immaterial. As long as the reference teaches the final product, then the claim is anticipated. Nishida does such.

The only argument by applicant regarding the application of the Goebel patent is that Goebel does not teach an extruded bipolar plate for a fuel cell. It is true, that Goebel does not specifically teach forming a bipolar plate by extrusion, however, the product formed in Goebel is the same as applicant and so the claim is anticipated by

Goebel. As stated previously in this answer, in a product-by-process claim, the method of making the product is immaterial. As long as the reference teaches the final product, then the claim is anticipated.

Applicant argues that Nishida does not teach recesses in the edges of the bipolar plates in Nishida. The examiner respectfully disagrees. By virtue of the bipolar plates in Nishida having peaks and valleys therein, the same forms recesses therein. With regard to Figure 1 in Nishida, the upper bipolar plate 21, for example, has a recess in the right side edge in which the end plate 37 is placed. Similarly, the left side edge of the upper bipolar plate 21 has a recess therein in which the end plate 17 is placed. It is noted that the edge of the plate 21 includes the outer peripheral right and left side portions of the bipolar plate which includes the area covered by the end plates and an opening through which gases flow.

Applicant also argues that Goebel does not teach recesses in the edges of the bipolar plates therein. By virtue of the bipolar plates in Goebel having peaks and valleys therein, the same forms recesses therein. For example, as seen in Figure 5 of Goebel, the right side edge of the bipolar plate 260 has a recess therein, which recess allows gas to flow therethrough. Also, the left side edge of the bipolar plate 260 includes a recess at the end thereof, which recess also allows gas to flow therethrough.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Maples whose telephone number is 571-272-1287. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Michener can be reached on 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John S. Maples/

John S. Maples  
Primary Examiner  
Art Unit 1728

JSM/1-20-2011